

4.9 Paleontological Resources

4.9.1 Existing Conditions

Paleontological resources represent a limited, nonrenewable, and impact-sensitive scientific and educational resource. As defined in this section, “paleontological resources” (i.e., fossils) are the remains and/or traces of prehistoric plant and animal life exclusive of man. Fossil remains such as bones, teeth, shells, and leaves are found in the geologic deposits (rock formations) where they were originally buried. Paleontological resources include not only the actual fossil remains, but also the collecting localities, and the geologic formations containing those localities.

Paleontological resource sensitivities are rated for individual formations and recognize the important relationship between fossils and the geologic formations within which they are entombed. A high sensitivity is assigned to geologic formations known to produce vertebrate fossil remains or are considered to have the potential to produce such remains. A moderate sensitivity is assigned to geologic formations that are judged to have a strong, but unproven potential for producing important fossil remains. A marginal sensitivity is assigned to geologic formations that are composed either of pyroclastic volcanic or meta sedimentary rocks, but which nevertheless have a limited probability of producing fossil remains from certain sedimentary lithologies at localized outcrops.

The Project Area is underlain by fill associated with the development of individual parcels, alluvium and slopewash, terrace deposits, Lindavista Formation, Stadium Conglomerate, Friars Formation, and the Santiago Peak Volcanics. Imported fill used for development sites is required to be screened for paleontological resources prior to the use for development, therefore, there is no paleontological resource sensitivity associated with this fill material. Alluvium and slopewash are not consolidated, and do not contain important paleontological resources. Table 4.9-1 identifies the paleontological resource sensitivity of the geologic formations discussed above.

TABLE 4.9-1
Paleontological Resource Sensitivity

Geologic Formation	Marginal Sensitivity	Moderate Sensitivity	High Sensitivity
Terrace Deposits		X	
Lindavista Formation		X	
Stadium Conglomerate		X	
Friars Formation			X
Santiago Peak Volcanics	X		

Source: Deméré, Thomas and Walsh, Stephen, 1993.

There are two types of terrace deposits, river and marine. Marine terrace deposits have a high paleontological sensitivity; whereas river terrace deposits have a moderate sensitivity. Since the San Diego

River is located within, and adjacent to the Redevelopment Project Area, river terrace deposits underlain portions of the Redevelopment Project Area. River terrace deposits include coarse-grained, gravelly sandstones, pebble and cobble conglomerates, and claystone.

Santiago peak volcanic areas contain either metasedimentary rocks or metavolcanic rocks and the paleontological sensitivity of Santiago Peak Volcanics varies depending on which type of rock is contained in the formation. The metavolcanic portion makes up a bulk of this formation in San Diego County. A portion of the Redevelopment Project Area is underlain with the metavolcanic portion of the Santiago Peak Volcanics, and is considered to be of marginal sensitivity.

4.9.2 Impact Threshold

For purposes of this EIR a significant impact will occur if the proposed project would:

- *Directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature.*

Because paleontological resources are largely a buried resource, there is no way to accurately predict what fossils are present within a site or their individual significance to the scientific community before they are discovered. For the purposes of this EIR, impacts to paleontological resources are considered significant if future redevelopment activities involve grading in areas underlain by geologic formations that exhibit a moderate to high paleontological resource potential.

4.9.3 Impact

Paleontological resources are typically impacted when earthwork activities such as mass excavation projects cut into geological deposits (formations) within which fossils are buried. These impacts are in the form of physical destruction of fossil remains. Since fossils are the remains of prehistoric animal and plant life, they are considered to be non-renewable. Such impacts are significant, and under CEQA Guidelines, require mitigation.

As identified in Table 4.9-1, the Friars Formation has a high potential for producing significant paleontological resources; the Terrace Deposits, Lindavista Formation and Stadium Conglomerate have a moderate potential for producing significant paleontological resources; and the Santiago Peak Volcanics have a marginal potential for producing significant paleontological resources.

As shown in Figure 4.9-1, the majority of the Redevelopment Project Area does not have a significant potential to yield paleontological resources. However, the eastern portion of Subarea A has a moderate and high paleontological resource sensitivity, several portions of Subarea B have moderate and high paleontological resource sensitivity, and Subarea C has a moderate and high paleontological resource sensitivity.

The specific location and nature of future redevelopment projects is currently unknown. However, it is anticipated that redevelopment activities will involve grading and earthwork with excavations into these formations. Any future earthwork involving disturbance to the Terrace Deposits, Lindavista Formation,

Stadium Conglomerate, and Friars Formation within the Project Area has the potential to impact paleontological resources. This is considered a significant impact. Implementation of Mitigation Measure PR1 will reduce the impact to paleontological resources to a level less than significant. Mitigation Measure PR1 requires monitoring of project site grading, and recovery and proper curation of fossils should significant fossils be encountered during site grading.

4.9.4 Significance of Impact

Future redevelopment activities have the potential to result in the substantial excavation of potential fossil-bearing geologic formations and the impact is considered significant.

4.9.5 Mitigation Measures

The following measures have been developed by the City of San Diego to reduce the project-related Paleontological impact to below a level of significance. These measures encompass a comprehensive program to protect paleontological resources should they be found at a construction site. The mitigation program is consistent with standard programs employed at other sites within the City of San Diego. Implementation of these measures would allow preservation and future scientific study of any important Paleontological resources encountered, thereby reducing the potential impact to below a level of significance. This mitigation measure applies to projects located within the Terrace Deposits, Linda Vista Formation, stadium conglomerate and friars formation only.

PR1 Prior to preconstruction (precon) meeting:

1. Land Development Review (LDR) Plan Check

Prior to the issuance of a Notice to Proceed (NTP) or any permits, including but not limited to, the first Grading Permit, Demolition Plans/Permits and Building Plans/Permits, the Assistant Deputy Director (ADD) of LDR shall verify that the requirements for Paleontological Monitoring have been noted on the appropriate construction documents.

2. Letters of Qualification have been Submitted to ADD

Prior to the NTP, and/or issuance of a Grading Permit, Demolition Permit or Building Permit, the applicant shall provide a letter of verification to the ADD of LDR stating that a qualified Paleontologist, as defined in the City of San Diego Paleontological Guidelines, has been retained to implement the monitoring program.

3. Second Letter Containing Names of Monitors has been sent to Mitigation Monitoring Coordination (MMC).

a. At least thirty days prior to the Preconstruction Meeting (Precon), a second letter shall be submitted to MMC which shall include the name of the Principal Investigator (PI) and the names of all persons involved in the Paleontological Monitoring of the project.

b. MMC will provide Plan Check with a copy of both the first and second letter.

4. Records Search Prior to Precon Meeting

At least thirty days prior to the Precon meeting, the qualified Paleontologist shall verify that a records search has been completed, and updated as necessary, and be prepared to introduce any pertinent information concerning expectations and probabilities of discovery during trenching and/or grading activities. Verification includes, but is not limited to, a copy of a confirmation letter from the San Diego Natural History Museum, other institution, or, if the record search was in-house, a letter of verification from the PI stating that the search was completed.

Precon Meeting:

1. Monitor Shall Attend Precon Meetings

- a. Prior to beginning of any work that requires monitoring, the Applicant shall arrange a Precon Meeting that shall include the Paleontologist, Construction Manager and/or Grading Contractor, Resident Engineer (RE), Building inspector (BI), and MMC. The qualified Paleontologist shall attend any grading related Precon Meetings to make comments and/or suggestions concerning the Paleontological Monitoring Program with the Construction Manager and/or Grading Contractor.
- b. If the Monitor is not able to attend the Precon Meeting, the RE, or BI as appropriate, shall schedule a focused Precon Meeting for MMC, Monitors, Construction Manager and appropriate Contractor's representatives to meet and review the job on-site prior to start of any work that requires monitoring.

2. Identify Areas to be Monitored

At the Precon Meeting, the Paleontologist shall submit to MMC a copy of the site/grading plan (reduced to 11x17) that identifies areas to be monitored.

3. When Monitoring Will Occur

Prior to the start of work, the Paleontologist also shall submit a construction schedule to MMC through the RE, or BI, as appropriate, indicating when and where monitoring is to begin and shall notify MMC of the start date for monitoring.

During Construction:

1. Monitor Shall be Present During Grading/Excavation

- a. The qualified Paleontologist shall be present full-time during the initial cutting of previously undisturbed formations with high and moderate resource sensitivity, and shall document activity via the Consultant Site Visit Record (form). This record shall be faxed to the RE, or BI as appropriate, and MMC each month.

2. Discoveries:

a. Minor Paleontological Discovery

In the event of a minor Paleontological discovery (small pieces of broken common shell fragments or other scattered common fossils) the Paleontologist shall notify the RE, or BI as appropriate, that a minor discovery has been made. The determination of significance shall be at the discretion of the qualified Paleontologist. The Paleontologist shall continue to monitor the area and immediately notify the RE, or BI as appropriate, if a potential significant discovery emerges.

b. Significant Paleontological Discovery

In the event of a significant Paleontological discovery, and when requested by the Paleontologist, the city RE, or BI as appropriate, shall be notified and shall divert, direct, or temporarily halt construction activities in the area of discovery to allow recovery of fossil remains. The determination of significance shall be at the discretion of the qualified Paleontologist. The Paleontologist with Principal Investigator (PI) level evaluation responsibilities shall also immediately notify MMC staff of such finding at the time of discovery. MMC staff will coordinate with appropriate LDR staff.

3. Night Work:

a. If night work is included in the contract

When night work is included in the contract package, the extent and timing shall be presented and discussed at the precon meeting.

(2) The following procedures shall be followed:

(a) No Discoveries

In the event that nothing was found during the night work, the PI shall record the information on the Site Visit Record Form.

b. Minor Discoveries

All Minor Discoveries shall be processed and documented using the existing procedures under 2. a., with the exception that the RE shall contact MMC by 9 A.M. the following morning.

c. Potentially Significant Discoveries

If the PI determines that a potentially significant discovery has been made, the procedures under 2.b., shall be followed, with the exception that the RE shall contact MMC by 8 A.M. the following morning to report and discuss the findings.

d. If night work becomes necessary during the course of construction

The Construction Manager shall notify the RE, or BI, as appropriate, a minimum of 24 hours before the work is to begin.

The RE, or BI, as appropriate, shall notify MMC immediately.

e. All other procedures described above shall apply, as appropriate.

4. Notification of Completion:

The Paleontologist shall notify MMC and the RE, or BI as appropriate, of the end date of monitoring.

Post Construction

The Paleontologist shall be responsible for preparation of fossils to a point of curation as defined by the City of San Diego Paleontological Guidelines:

1. Submit Letter of Acceptance from Local Qualified Curation Facility.

The Paleontologist shall be responsible for submittal of a letter of acceptance to ADD of LDR from a local qualified curation facility. A copy of this letter shall be forwarded to MMC.

2. If Fossil Collection is not Accepted, Contact LDR for Alternatives

If the fossil collection is not accepted by a local qualified facility for reasons other than inadequate preparation of specimens, the project Paleontologist shall contact LDR, to suggest an alternative disposition of the collection. MMC shall be notified in writing of the situation and resolution.

3. Recording Sites with San Diego Natural History Museum

The Paleontologist shall be responsible for the recordation of any discovered fossil sites at the San Diego Natural History Museum.

4. Final Results Report

a. Prior to the release of the grading bond, two copies of the Final Results Report (even if negative), which describes the results, analysis, and conclusions of the above Paleontological Monitoring Program (with appropriate graphics) shall be submitted to MMC for approval by the ADD of LDR.

b. MMC shall notify the RE or BI, as appropriate, of receipt of the Final Results Report.

4.9.6 Conclusion

Implementation of Mitigation Measure PR1 will reduce the impact to paleontological resources to a level less than significant.

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